

Identifying predictors for organ damage in children with systemic lupus erythematosus

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Childhood-onset systemic lupus erythematosus (cSLE) is a chronic, severe autoimmune disorder that carries a risk of early organ damage.

Identifying specific predictors in children is vital for preventing such damage.

At their 2024 congress, EULAR—The European Alliance of Associations for Rheumatology—ran a session on pediatric rheumatology that showcased new work on the factors associated with damage accrual in cSLE, with a focus on corticosteroid regimens and maintenance of low [disease](#) activity.

cSLE is a rare multisystem disorder with significant associated morbidity, but evidence-based guidelines are sparse, and as such management is often based on clinical expertise. The EULAR/ACR-2019 criteria have shown sensitivity in cSLE patients, which could allow earlier recognition of patients with single or major organ involvement, but identifying specific predictors in this vulnerable group is vital for preventing long-lasting damage.

The [new work](#), presented at the 2024 EULAR congress, aimed to work out how clinical, demographic, and treatment variables correlate with damage accrual in cSLE. Maria Hanif and colleagues hoped that stratifying patients according to average disease activity levels over the disease course would help them to identify independent predictors of damage—even in [children](#) with low disease activity.

To achieve this, data were collected in 430 children taking part in the UK JSLE Cohort Study. Analyses were performed across the entire cohort, as well as in two subgroups based on disease activity: low activity, and moderate-to-high activity.

Over a median follow-up period of 46 months, 23% of children experienced organ damage. Within the entire cohort, multivariable analyses showed that three factors were associated with damage accrual: methylprednisolone exposure, time-adjusted mean Physician's Global

Assessment (PGA) score, and Adjusted Mean SLE Disease Activity Index (AMS) score.

When looking only at the moderate-to-high disease activity subgroup, 28.1% experienced damage—but the same three factors were identified as predictors. Within the low disease activity subgroup, 20.5% of children accrued new damage, and again methylprednisolone exposure and time-adjusted mean PGA score were associated with damage accrual, but not AMS score.

This study underscores the role of corticosteroid exposure as a significant and potentially modifiable risk factor in cSLE, and suggests there is a need to review pediatric dosage limits—which typically exceed adult recommendations. Additionally, a direct link was found between disease activity and damage, with every 1-unit increase in SLE Disease Activity Index (SLEDAI) raising the risk of damage by 13–15% in those with moderate-to-high activity.

This was not observed in patients with an AMS of 4 or less, suggesting that low disease activity—maintained via treat-to-target strategies—could substantially reduce damage risk. These findings highlight the need for updated treatment protocols that limit corticosteroid use while still effectively managing disease activity.

More information: M. Hanif et al, OP0246 Factors associated with damage accrual in childhood systemic lupus erythematosus (cSLE): Corticosteroid regimens and maintenance of low disease activity, *Scientific Abstracts* (2024). [DOI: 10.1136/annrheumdis-2024-eular.1166](https://doi.org/10.1136/annrheumdis-2024-eular.1166)

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